

WHAT IS CLAIMED IS:

1                   1.       A probe for detecting magnetic resonance signals emitted from a  
2 region of interest in an object comprising:

3                   (a)       at least first and second electrodes positionable on or within the object  
4 in proximity to the region of interest, and

5                   (b)       feed wires coupling the electrodes to a signal detector,  
6 wherein the electrodes and feed wires cooperatively function with matter  
7 within the region of interest to form a signal detecting coil.

1                   2.       The probe as defined by claim 1 wherein the first and second  
2 electrodes are spaced apart with matter within the region of interest therebetween.

1                   3.       The probe as defined by claim 2 wherein the matter comprises tissue.

1                   4.       The probe as defined by claim 2 wherein the matter comprises fluid.

1                   5.       The probe as defined by claim 2 wherein the number of electrodes  
2 exceeds two.

1                   6.       The probe as defined by claim 5 wherein the electrodes are carried by a  
2 catheter.

1                   7.       The probe as defined by claim 6 wherein electrodes are rings around  
2 the circumference of the catheter.

1                   8.       The probe as defined by claim 6 wherein the electrodes are extendable  
2 from and retractable within the catheter.

1                   9.       The probe as defined by claim 2 wherein the electrodes are carried by a  
2 catheter.

1                   10.      The probe as defined by claim 9 wherein the electrodes are rings  
2 around the circumference of the catheter.

1                   11.      The probe as defined by claim 9 wherein the electrodes are extendable  
2 from and retractable within the catheter.

1                    12.     The probe as defined by claim 2 wherein the electrodes comprise  
2     needles.

1                    13.     A method of imaging a region of interest in an object comprising the  
2     steps of:

3 (a) placing the object in a static magnetic field,  
4 (b) applying RF excitation pulses to the region of interest, and  
5 (c) detecting magnetic resonance signals from the region of interest with  
6 an array of at least two spaced electrodes in proximity to the region of interest.

1                    14.        The method as defined by claim 13 wherein the electrodes and feed  
2        wires to the electrodes cooperatively function with tissue in the region of interest to form an  
3        RF signal detecting coil.

1                    15.     The method as defined by claim 13 wherein the electrodes comprise  
2     needles.

1 16. The method as defined by claim 13 wherein the electrodes are carried  
2 by a catheter.

1                    17.     The method as defined by claim 16 wherein the electrodes comprise  
2     rings around the circumference of the catheter.

1                    18.     The method as defined by claim 16 wherein the electrodes are  
2     extendable from and retractable within the catheter.